A NEW VISION FOR ICRISAT

Responding to the Recommendations of the Fourth EPMR

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ICRISAT's STRATEGY

Partnerships in Research for Development

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- *socio-economic resources of the SAT*

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CONTEXT

The Fourth External Programme and Management Review (EPMR) of 1996/97 praised ICRISAT's record of scientific accomplishment and impact over the past quarter-century, but reminded the Institute that times are changing- and so must ICRISAT. The EPMR suggested a path for renewal, which it called the Strategic Partnership Model. ICRISAT endorsed the main features of the Model, and is now facing the substantial challenges of implementation. As promised to TAC, this document outlines the steps underway.

The Model envisions a different type of ICRISAT: one which is more open, partnership-oriented, aware of (and vigorously exercising) its comparative advantages, and able to leverage modern technologies and skills.

The rationale for having a Center like ICRISAT continues to be strong. Because of the harsh conditions facing SAT farmers, agricultural progress has not kept pace with more fortunate areas. Average annual growth in the SAT over the past 25 years did not exceed one percent, well below the 4-5% rate achieved in wetter agro-ecosystems. Population increases continue to add more pressure on an already-weak natural resource base, forcing poor communities to extend cultivation into still more marginal lands.

With its international character and perspective, ICRISAT continues to be uniquely well-placed to form a bridge among Asia and Africa, helping each continent benefit from experiences gained in the other. These bridges also extend to advanced institutions, which can more effectively leverage the tools of modern science to help the poor, by channeling them through ICRISAT's vibrant web of relationships with NARS, networks, and regional fora.

In short, the new millenium offers ICRISAT immense opportunities, if it can meet the substantial challenges involved in modernizing the skills profiles, operational processes, and institutional culture of the past. Change, though is especially formidable at a time when donor fatigue is constraining ICRISAT's ability to make the necessary restructuring investments.

Since the conclusion of the EPMR, a new Director General has joined ICRISAT, Dr. Shawki Barghouti. He has engaged staff in a wide-ranging re-examination of its vision and strategy, based on the EPMR findings, Board advice, and other stakeholder inputs. An Institute-wide meeting was held in early January, 1998 to channel these deliberations into a restructuring of the research strategy and workplan for 1998/99. The new set of Programs and Projects are described in detail in the 1999-001 Medium Term Plan (MTP). Major dimensions of change are also outlined in the present document.

ICRISAT's MISSION

ICRISAT's mission is to increase food security, reduce poverty and protect the environment in the semi-arid tropics, through partnership-based international agricultural research.

ICRISAT is concerned, first and foremost, with ensuring that the best science is brought to bear to promote the optimum use of the resource endowment of the SAT.

ICRISAT's STRATEGY

Partnerships in Research for Development

Responding to the fifth Recommendation of the EPMR, ICRISAT's research work will be more closely attuned to and integrated with partners' needs and priorities.

ICRISAT's current (and future) in-house capacity will be necessary but not sufficient for implementing its strategy. ICRISAT can accomplish its mission only through carefully selected strategic partnerships. ICRISAT will capitalize and leverage its own tangible and intangible resources to gain access to the resources it needs from outside the center.

NARS are ICRISAT's most immediate and intimate partners. ICRISAT will continue working closely with them. In addition, ICRISAT will work with NGOs, private sector institutions, farmers, and others when such partnerships add value to what ICRISAT does.

Concrete steps are underway in a number of areas- many of them formative and difficult to document, but representing real change nonetheless. Proposal development to underwrite partnership-based projects is now a major effort in all three Programs. Many of these proposals include budgeting for visiting scientistships and/or subcontracting relationships, to more fully incorporate the participation of NARS partners. One specific indicator of ICRISAT's increased commitment to partnerships is that approximately one-quarter of the Institute's proposed budget in 1999 is directed towards the CGIAR Undertaking "Strengthening NARS".

More deliberate network support and integration, and participatory-based, demand-driven priority setting, are becoming routine modes of business at ICRISAT. A new Project (G9) specifically addresses network support in the genetic resources and enhancement area (see 1999-001 MTP), while participatory approaches feature strongly in resource management (R6) and socioeconomics (S1).

In coordination with NARS partners, greater attention is also being paid to relationships with private sector partners, who are often highly effective channels of technology refinement and delivery. In addition to collaboration with industry breeding efforts, public, private, parastatal, and relief-aid seed systems are receiving careful study through partnership initiatives (S4). For Projects G4 and G5, discussions are underway with some biotechnology firms concerning possible new relationships and collaboration for mutual benefit.

ICRISAT will continue to function primarily as a research institution. However, partners, often in conjunction with development investors (donors), have repeatedly expressed a desire for ICRISAT to become more closely involved with the applied research dimensions of major development projects. Meeting this need will require closer integration with partners throughout the R&D process: planning, fund-seeking, project execution, and impact assessment. ICRISAT is pleased to engage in this change of orientation, because it enables the Institute to provide more mature, on-the-job capacity building experiences to its partners, which it believes are more effective than formulaic training programs. Discussions with a number of partners and investors are in progress.

Scientific Focus

ICRISAT's primary focus is on three key resources of the SAT:

- Genetic
- Natural
- Socio-economic

Genetic Resources of the SAT: ICRISAT is concerned with effective utilization of the full genetic resource endowment of the SAT. Work will not be limited only to the mandate crops, although these will continue to receive priority in ICRISAT's genetic resources conservation effort. ICRISAT will also help when called upon in areas where its crops are important to developing countries lying outside the SAT.

Natural Resources of the SAT: ICRISAT, in partnership with relevant stakeholders, will strive to identify ways in which SAT farmers and communities can make better use of their natural resource endowments. ICRISAT's work will cover all developing countries and regions of the SAT.

Socio-economic Resources of the SAT: ICRISAT's mission is centered on the welfare of the people of the SAT- and recognizes that the solution to SAT problems can only come through their efforts. Participation of farmers, communities, women, and other key constituencies within the social fabric of the SAT poor, will be a major feature of ICRISAT's renewal.

New Scientific Directions

To realize its vision, ICRISAT will capitalize on revolutions taking place in three areas of science:

Genetics: Responding to the EPMR's first and second Recommendations, increased emphasis on the new tools of biotechnology will enable ICRISAT to understand better (and faster) the full potential of SAT's genetic resource endowment, preserve the genetic heritage, and develop new materials.

Ecology and informatics: Responding to the fourth Recommendation (in part), ICRISAT will make full use of new GIS and other technologies for characterizing and modeling natural resource systems, and for targeting and sharing of information and materials.

People-centered science: In keeping with a number of EPMR suggestions, ICRISAT will utilize to the fullest extent people-centered research approaches to understand the dynamics of households and communities and to design technologies through participatory approaches.

Research approach

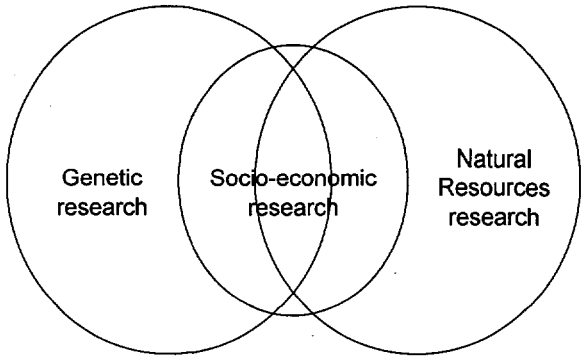
ICRISAT will use a three-pronged approach to helping the people of SAT make better use of their resources:

1. Research on **understanding the potential** of SAT resources;
2. Research to **generate knowledge and technology** that promotes better use of SAT resources; and
3. **Sharing of technologies** with partners, including studies of technology adoption and use.

This approach, when coupled with ICRISAT's focus on three key SAT resources, yields the following broad research agenda for ICRISAT:

	Research Focus		
SAT Resources	Understanding potential	Generating Technology	Sharing Technology
Genetic			
Natural			
Socio-Economic			

While some of ICRISAT's research will be specific to genetics, natural resources management or socio-economics, much of the work will cut across two or three of these areas:



Strategy for Genetic Resources Research

In agreement with the first Recommendation of the EPMR, ICRISAT will strengthen its role in collecting, conserving, and characterizing crop germplasm resources of the SAT. When resources permit it will explore a similar role in microbial germplasm resources. The priority will continue to be placed on the ICRISAT mandate crops in the area of conservation. ICRISAT, in cooperation with IPGRI and other institutions, will serve as catalyst in the conservation of other crop genetic resources, if it appears that these may be endangered, and where ICRISAT holds a comparative advantage vis-a-vis other institutions.

In addressing the EPMR's second Recommendation, ICRISAT will adopt a new paradigm in strategic germplasm research, using all necessary disciplines and "new science" to exploit, more systematically and fully, the genetic endowment in its gene bank. Biotechnology work will feature strong partnerships with advanced research institutions, and the transfer of these new tools to SAT NARS.

Further to the same Recommendation, the crop improvement efforts of ICRISAT will evolve into a global germplasm strategic research effort, with germplasm evaluation and enhancement components that provide intermediate products to crop improvement programs operated by NARS partners and/or NARS and networks. Discussions are underway to develop mechanisms by which the Patancheru-based strategic germplasm effort will stay closely informed of, and in service to the needs of Africa and other global users of these products.

For the first time in ICRISAT's history, its genetic improvement effort is being organized according to major topical thrusts, rather than crop mandates. The objective of this change is to create more flexibility to address the Institute's Mission as the top priority, rather than placing crop mandates *a priori* as the overarching determinant of the research agenda.

The new thrusts are:

(i) help developing countries rescue and preserve endangered crop biodiversity

(ii) introduce and apply new biotechnological tools to SAT needs

(iii) identify valuable new traits for resistance to biological & environmental stresses

(iv) improved breeding populations as vehicle for sharing new traits with NARS

ICRISAT's proportional investments in these thrusts are projected to evolve as shown in Figure1, reflecting increases in categories (i) and (ii) in keeping with the new paradigm. The projected Asia/Africa balance is also indicated. Within these four thrusts relating to genetic resources and enhancement, a total of nine CGIAR Projects have been defined, as profiled in the new 1999-001 MTP.

Strategy for Natural Resources Research

The fourth Recommendation of the EPMR asked ICRISAT to reassess its natural resources management research strategy. in an integrated natural resource management (INRM) context. Although ICRISAT preferred not to mount yet another formal review, intensive in-house discussions have been engaged to attempt to redress the perceived shortcomings of the past.

ICRISAT's past natural resources management (NRM) work placed its major focus on field-level management questions. These emphases will now shift in favor of both more micro (plant/soil/nutrient/biota/farmer interactions) and more macro (e.g, watershed, landscape, ecoregion) directions. This is illustrated in Figure 2. At the macro end of the scale, land degradation and water use will be two major thrusts of ICRISAT's NRM work in Asia, where partners are urgently requesting ICRISAT's help in addressing these consequences of agricultural intensification.

Relating to EPMR Recommendation 5, participatory approaches will also become integral to the agenda. ICRISAT will study, in collaboration with partners, how farmers and communities manage the natural resources of the SAT, with the aim of identifying more efficient uses of these assets. Particularly in Africa, where impact has been limited by low adoption rates, participatory methods will be applied to better understand farmers' decision-making processes, and these criteria will be used as inputs into systems models to identify options for more efficient use of resource assets. Enhanced partnerships, especially in the areas of participatory methodology and gender awareness, will be integral to these efforts.

Work on integrated pest management (IPM) is being shifted from the former commodity projects, into the NRM arena. This is appropriate and relevant to the EPMR counsel to pursue an INRM strategy, since the management of pests, diseases, and weeds is an integral aspect of farming systems.

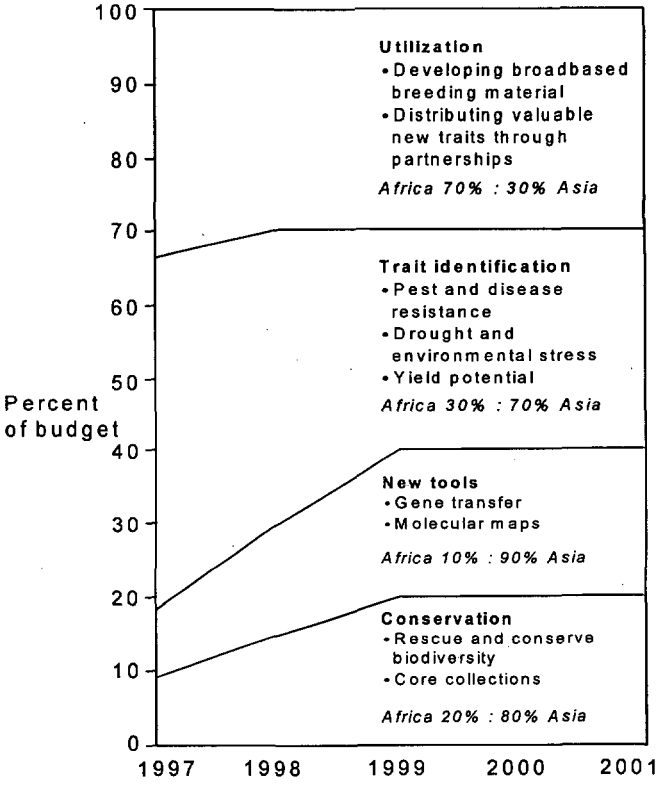


Figure 1. Evolution of ICRISAT's genetic resources activities.

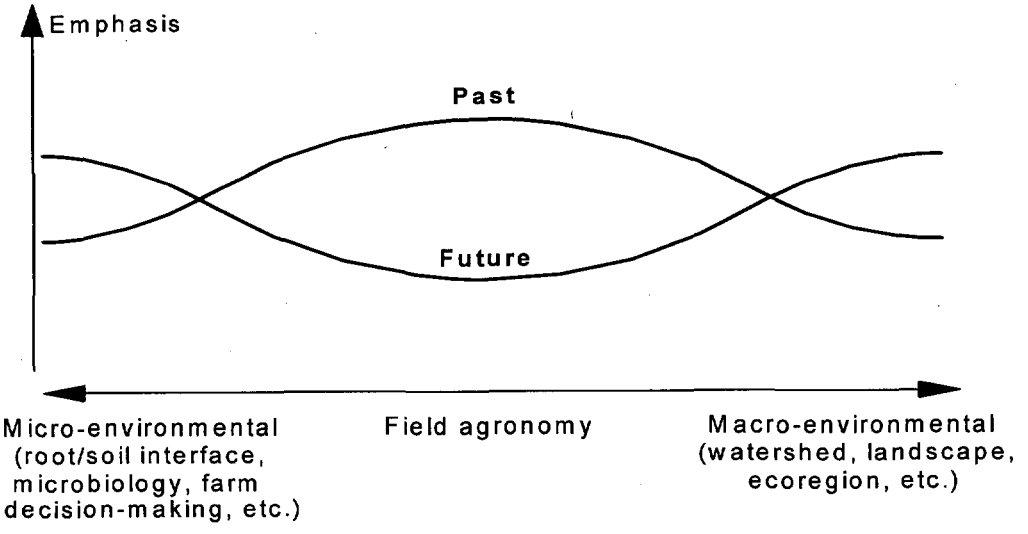


Figure 2. Evolution of ICRISAT's resource management research.

Strategy for Socio-Economic Research

ICRISAT's socio-economic research will increase its leadership profile in setting the research agenda of the future, with less emphasis on documenting the past. This will require greater effort to understand the major emerging trends in the SAT economic and institutional environment, and farmers' responses to them. Responding to EPMR advice, there will be a trend towards increased subcontracting of *ex post* impact assessment studies to NARS, supported by technical backstopping from ICRISAT.

ICRISAT's portfolio of socio-economics research activities will be built around three broad thrusts:

(i) identify major emerging trends to guide future research

(ii) increase impact by leveraging wider spillovers of technologies

(iii) break through bottlenecks which limit impact of key existing technologies

Through socio-economic and policy research, ICRISAT will explore ways of enhancing both the impact of its own work and the impact of agricultural (in particular, technology) policies of its partners in the SAT.

As in the case of INRM, ICRISAT's socio-economic work will proceed in both micro and macro directions. At the micro level, ICRISAT will continue examining the farmer-technology interface to gain better understanding of what works and what does not, and why farmers do what they do. At the macro level, ICRISAT's research will be helped by a better understanding of the future of SAT agriculture, alternative investment strategies, and technology policies. ICRISAT will form alliances with relevant national and international socio-economic and policy research institutions in the conduct of this research.

Asia - Africa Balance

The balance of effort between Asia and Africa was a major issue of concern for the EPMR Panel. ICRISAT's plans to address this issue are largely in agreement with the EPMR's suggestions, but will take some time to implement.

For genetics research, the first and second Recommendations are relevant. ICRISAT agrees that the facilities at Patancheru provide unparalleled access to the gene bank and biotechnology labs, although particular problems will require (and benefit from) special strategies involving partners in the different regions. The development of breeding populations will emphasize vigorous partnerships with NARS, with greater direct ICRISAT involvement in Africa.

Also in agreement with the EPMR, work on natural resources management will emphasize Africa, especially on breaking through barriers to increased productivity on-farm, in sustainable ways. Plans for redeployment are being discussed with partners, so

that they are undertaken in a demand-driven fashion. In Asia, the focus will be on environmental and sustainability problems arising from the intensification of SAT agriculture, as discussed earlier.

Socio-economic research will address the apparent discrepancy between the adoption and success of agricultural technology in Africa as compared to Asia, seeking ways to overcome the roadblocks to progress on the African continent. This includes a better understanding of how SAT smallholders make decisions on priority uses of their limited resources, including the influences of input and product markets, as well as institutional forces.

INSTITUTIONAL RENEWAL

ICRISAT's Transformation

EPMR Recommendations 6-10 addressed a number of shortcomings in governance and management. ICRISAT is addressing these through a far-reaching institutional transformation - the most penetrating since its establishment. This has been prompted not only by the EPMR, but also by a serious financial shortfall.

Board Governance

EPMR Recommendations 6 and 9 urged the Board to provide greater leadership, and be more diligent in its oversight of key ICRISAT policies and functions. Since those Recommendations were issued, the Board has made efforts to become better informed, and more actively engaged in ICRISAT's oversight. It has established mechanisms for staff input, and actively reviews research programs underway at the venue of each rotating Board meeting. It has committed to become more closely involved in the commissioning of CCERs than in the past, and in the follow-up of CCER recommendations.

The Board is taking steps to increasingly decentralize the responsibilities of the Executive Committee to its more specialized topical Committees (Finance, Program, Technical Exchange, and Nominations), because these Committees are able to devote more time and expertise towards oversight, strategy, and policy in their topical areas. An Audit Sub-Committee has been constituted within the Finance Committee to strengthen the operational oversight of the Institute's financial planning function.

As an example of active oversight on a major issue, the Board worked closely with management in developing the 1997 staff downsizing scheme, which was implemented since the EPMR. This was a difficult and sensitive task, but necessary for financial viability of the Institute.

New Business Practices

EPMR Recommendation 7 points out the need for a range of improved management processes at ICRISAT. These are being addressed across all functional entities of the Institute. The overreaching principle is that ICRISAT must operate as an efficient business. Taxpayers in many countries, through their development assistance agencies, have entrusted ICRISAT with prudent use of their grant funds. Changes must be introduced to show that ICRISAT is honoring that trust.

Many of ICRISAT's current business practices are anachronistic. Significant overhauls are needed in human resources, administrative procedures, Patancheru campus management, use of information technology, and Africa locations.

In human resources, all existing policies are being revised. The thrusts of the changes are:

- a uniform set of staff policies for everyone who works at ICRISAT, replacing ad-hoc (or nonexistent) procedures, supplemented by additional policies that apply to internationally-recruited staff, and locally-recruited staff in different locations;
- introducing term contracts for all staff;
- a new performance planning and review system (which most managers have been trained in the use of);
- new procedures for recruitment, separation, and for handling grievances;
- rationalization of all staff benefits and perquisites.

ICRISAT's administrative procedures are being examined to reduce bureaucracy and bring flexibility to research operations. Planning, budgeting, reporting, purchasing and other administrative procedures are being streamlined.

Administrative divisions will be responsible for servicing the research programs and for implementing institute-wide policies. Emphasis will be on greater global coherence of policies and practices, and removing administrative burdens from scientists. These changes will be made with greater transparency and communication, including consultation to take advantage of the perspectives and insights of those in the "front lines."

ICRISAT is currently examining its staffing pattern in the light of the new vision and emerging organizational structure, and financial realities. Final staffing decisions will await the appointment of the key Director-level staff.

ICRISAT is behind some of its sister centers in the CGIAR in the use of information technology in day-to-day operations. ICRISAT will make use of the excellent know-how available in Hyderabad and India to spearhead an "information revolution" at ICRISAT.

This will aim at -

- bringing smooth electronic connectivity to all ICRISAT locations, including video conferencing if possible, to facilitate trans-continental dialogues among ICRISAT staff;
- making available to all ICRISAT staff, databases and other information services to facilitate their research and research management (such as an ICRISAT intranet);
- establishing improved communication with partner organizations in all phases of collaborative research.

With regard to the management of the ICRISAT campus at Patancheru, large efficiency gains are possible and essential. New business practices are being introduced:

- Several housekeeping functions (such as laundry services, city house maintenance, and airport pickup) have been outsourced, following the 1997 staff reductions;
- The campus is a most significant tangible asset. ICRISAT is examining the use of this asset from a business perspective. Capacities that are not being fully utilized (e.g., the farm, training infrastructure, dormitories, etc.) will be shared (at cost) with partner institutions for compatible uses, adding value to the fixed investment of development investors;
- Campus services will operate as a set of cost centers, with each unit required to recover the reserves they utilize from their agreed budget. This will require that they charge full real costs to users. Where practicable, users will be allowed to have choices as to the service provider (internal or external), to create an incentive for internal services to become more competitive, efficient, demand-driven, and user-responsive.

Regarding Africa locations, the present configuration arose largely as a result of an historical assemblage of targeted donor support focusing on sub-regional needs. ICRISAT's declining budget can no longer support this scope of operations. An analysis is underway to identify efficiency gains from consolidation, while preserving the most crucial dimensions of partnerships. The thrusts of the recommended changes are:

- Consolidating the current three locations in West Africa into a strong regional presence in Bamako, Mali;
- Posting a team of resource management specialists in Bulawayo, Zimbabwe, supplemented with smaller teams attached to NARS, mainly through targeted donor support in Southern and Eastern Africa;
- Transferring most of the resource management resources at Patancheru to these African locations, and reducing and streamlining Patancheru operations.

New Organizational Arrangements

With specific reference to the research management concerns raised by EPMR Recommendation 7, ICRISAT is responding by rebuilding itself as a leaner, more flexible, and financially sustainable institution. The former 12 Projects are being consolidated into just three research Programs, corresponding to the three SAT resources ICRISAT is most concerned with. These are:.

⇒ Genetic Resources and Enhancement Program

⇒ Natural Resources Management Program

⇒ Socioeconomics and Policy Program

Each Program will be led by a Program Director, who will be responsible for quality assurance and overall program performance. Research will be ***output***-focused, with clear statements of major goals and concrete products under development, and time-bound milestones along the way. To efficiently organize and monitor research, the scientific and operational *inputs* will be organized through the definition of projects, tied to the achievement of those milestones. Many of the projects will involve collaboration between Programs.

While projects provide the basis for team approaches to problem-solving, they will ultimately be an avenue for the devolution of increased responsibility and authority to individual scientists, ICRISAT's most important research resource.

The Director General will continue to be responsible for overall institute management, and will operate through an open and consultative (which does not always equal consensus) approach.

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In closing, ICRISAT believes that the numerous and fundamental changes briefly described in this document will position it as a more efficient and effective agent of change in improving the lives of the poor in the semi-arid tropics. It is confident that these changes will recapture the confidence of investors and stakeholders, who stand to gain so much from an efficient and vigorous Institute.